

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter I of the Patent Cooperation Treaty)

(PCT Rule 44bis)

Applicant's or agent's file reference FOR200502PCT	FOR FURTHER ACTION		See item 4 below
International application No. PCT/JP2005/000368	International filing date (<i>day/month/year</i>) 14 January 2005 (14.01.2005)	Priority date (<i>day/month/year</i>) 15 January 2004 (15.01.2004)	
International Patent Classification (8th edition unless older edition indicated) See relevant information in Form PCT/ISA/237			
Applicant NSK LTD.			

<p>1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 bis.1(a).</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.</p>																								
<p>3. This report contains indications relating to the following items:</p> <table> <tbody> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. I</td> <td>Basis of the report</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </tbody> </table> <p>4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44bis.3(c) and 93bis.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44bis .2).</p>	<input checked="" type="checkbox"/>	Box No. I	Basis of the report	<input type="checkbox"/>	Box No. II	Priority	<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability	<input type="checkbox"/>	Box No. IV	Lack of unity of invention	<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement	<input type="checkbox"/>	Box No. VI	Certain documents cited	<input type="checkbox"/>	Box No. VII	Certain defects in the international application	<input type="checkbox"/>	Box No. VIII	Certain observations on the international application
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<input type="checkbox"/>	Box No. VIII	Certain observations on the international application																						

Date of issuance of this report 22 August 2006 (22.08.2006)	
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PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:

PCT

TRANSLATION

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

		Date of mailing (day/month/year)
Applicant's or agent's file reference FOR200502PCT		FOR FURTHER ACTION See paragraph 2 below
International application No. PCT/JP2005/000368	International filing date (day/month/year) 14.01.2005	Priority date (day/month/year) 15.01.2004
International Patent Classification (IPC) or both national classification and IPC		
Applicant NSK LTD.		

1. This opinion contains indications relating to the following items:

- Box No. I Basis of the opinion
- Box No. II Priority
- Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- Box No. IV Lack of unity of invention
- Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- Box No. VI Certain documents cited
- Box No. VII Certain defects in the international application
- Box No. VIII Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/JP	Authorized officer
Facsimile No.	Telephone No.

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY

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Box No. I	Basis of this opinion
1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.	
<input type="checkbox"/> This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).	
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:	
a. type of material	
<input type="checkbox"/> a sequence listing	
<input type="checkbox"/> table(s) related to the sequence listing	
b. format of material	
<input type="checkbox"/> in written format	
<input type="checkbox"/> in computer readable form	
c. time of filing/furnishing	
<input type="checkbox"/> contained in the international application as filed.	
<input type="checkbox"/> filed together with the international application in computer readable form.	
<input type="checkbox"/> furnished subsequently to this Authority for the purposes of search.	
3. <input type="checkbox"/> In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.	
4. Additional comments:	

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International application No.
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Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement																									
<p>1. Statement</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">Novelty (N)</td> <td style="width: 40%;">Claims</td> <td style="width: 30%;"><u>1-17</u></td> <td style="width: 10%; text-align: right;">YES</td> </tr> <tr> <td></td> <td>Claims</td> <td></td> <td style="text-align: right;">NO</td> </tr> <tr> <td>Inventive step (IS)</td> <td>Claims</td> <td></td> <td style="text-align: right;">YES</td> </tr> <tr> <td></td> <td>Claims</td> <td><u>1-17</u></td> <td style="text-align: right;">NO</td> </tr> <tr> <td>Industrial applicability (IA)</td> <td>Claims</td> <td><u>1-17</u></td> <td style="text-align: right;">YES</td> </tr> <tr> <td></td> <td>Claims</td> <td></td> <td style="text-align: right;">NO</td> </tr> </table>			Novelty (N)	Claims	<u>1-17</u>	YES		Claims		NO	Inventive step (IS)	Claims		YES		Claims	<u>1-17</u>	NO	Industrial applicability (IA)	Claims	<u>1-17</u>	YES		Claims		NO
Novelty (N)	Claims	<u>1-17</u>	YES																							
	Claims		NO																							
Inventive step (IS)	Claims		YES																							
	Claims	<u>1-17</u>	NO																							
Industrial applicability (IA)	Claims	<u>1-17</u>	YES																							
	Claims		NO																							
<p>2. Citations and explanations:</p> <p>Document 1: JP, 9-242880, A (NOK K.K.), 16 September, 1997 (16.09.97)</p> <p>Document 2: JP, 2001-324018, A (Kurashiki Kako K.K.), 22 November, 2001 (22.11.01)</p> <p>Document 3: Microfilm of the specification and drawings annexed to the application of Japanese Utility Model Application No. 10845/1991 (Laid-open No. 100964/1992), (Mitsubishi Automotive Engineering Co., Ltd.), 1 September, 1992 (01.09.92)</p> <p>Document 4: Microfilm of the specification and drawings annexed to the application of Japanese Utility Model Application No. 97307/1983 (Laid-open No. 7325/1985), (Hakusui Gomu K.K.), 19 January, 1985 (19.01.85)</p> <p>Document 5: Microfilm of the specification and drawings annexed to the application of Japanese Utility Model Application No. 156028/1987 (Laid-open No. 60078/1998), (Isuzu Motors Ltd.), 17 April, 1989 (17.04.89)</p> <p>Document 6: Microfilm of the specification and drawings annexed to the application of Japanese Utility Model Application No. 70433/1989 (Laid-open No. 12050/1991), (Isuzu Motors Ltd.), 7 February, 1991 (07.02.91)</p> <p>Document 7: Microfilm of the specification and drawings annexed to the application of Japanese Utility Model Application No. 141517/1988 (Laid-open No. 62170/1990), (Toyoda Gosei Co., Ltd.), 9 May, 1990 (09.05.90)</p> <p>Document 8: JP, 6-185617, A (Kyoraku K.K.), 8 July, 1994 (08.07.94)</p> <p>The subject matters of claims 1-3 and 8-15 do not appear to involve an inventive step in view of document 1 (page 3, right column, paragraphs [0026]-[0029], Fig. 2), document 2 (page 2, right column, paragraphs [0007] and [0008], Figs. 1-6), and document 3 (page 4, line 3 to page 5, line 2, Figs. 1-3), all cited in the ISR. A person skilled in the art could have easily made a constitution wherein the ends on the outer periphery of the bellows in document 1 are connected with one another as in the ends on the inner periphery of the bellows in document 1, and are formed in one piece, with a bush made of a low-friction material as in document 3 or 4. Such a person could have made a constitution of the bellows integrated by fitting a bush, as required. Such a person could have made a constitution wherein the bush has a lubrication groove in its inner peripheral surface and a step in its outer peripheral surface to prevent the bellows from coming off, as required.</p>																										

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

The subject matter of claims 4-7 do not appear to involve an inventive step in view of documents 1-4, and document 5 (page 4, line 15 to page 5, line 4, Fig. 1) or document 6 (page 6, line 5 to page 8, line 2, Figs. 1-4) or document 7 (page 7, line 6 to page 8, line 2, Fig. 1) all cited in the ISR. The feature where the ends of bellows are tightly fastened by a fastening member to be fixed to a bush is shown in documents 4-7; and fastening the ends of a plurality of bellows tightly by a fastener to fix the bellows to a bush as in documents 1 and 2 would be easy for a person skilled in the art. Crimping the bush to prevent the fastening member from coming off is simply practiced as required. The feature of preventing the fastening member from coming off by means of a hook is disclosed in document 6. The feature of curling the edges of the ends in contact with bellows is disclosed in document 7.

The subject matters of claims 16 and 17 do not appear to involve an inventive step in view of documents 1-4 and document 8 (page 2, left column, paragraphs [0005] and [0006], Fig. 1) cited in the ISR. A person skilled in the art could have easily made rough faces formed on the contact portions of the bellows in document 1 or 2 to reduce the area of contact as in document 8.